TurboPak

OPERATING INSTRUCTIONS

TURBOPAK
USER GUIDE BWL-0440 (04/07)
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Introduction

Dear Valued Customer,

Thank you for choosing the Bowens Turbo-Pak battery for professional flash systems.

Accurate, ergonomic, powerful and simple to use, the Turbo-Pak was designed by working closely with photographers to develop a product that meets the standards demanded by today's professional photographers. For details of all related products, please contact your local distributor, a list of which can be found at **www.bowens.co.uk**. In order to obtain the full benefit from your purchase, please take a few moments to familiarise yourself with this user manual.

Thank you.
Bowens International Ltd.

Safety Notes

DO NOT:

- Use the TurboPak in an environment where moisture or flammable vapour is likely to come in contact with the unit.
- Restrict air vents while in use.
- Use a unit with damaged housing, mouldings, sockets etc. If the unit is dropped or damaged in anyway always have it checked out before using.
- Charge the Battery Cassette in an air tight container.
- Open the casing or modify the operation of any Bowens units.
- Connect an external mains supply to any Gemini that is also connected to the Turbo-Pak. (this may cause a circuit breaker to trip or a fuse to blow to protect the user).
- The Battery Cassette is protected by two 40A automotive blade type fuses for the main power and one 5A fuse for the charger. NEVER change the fuses for a different type or rating. In the event that one or more fuses have blown it is likely that a genuine fault has occurred and the unit and/or Battery Cassette will need repair by an authorised Service Centre.

DO:

- Read Instructions before use.
- Avoid placing cables where they can be tripped over. Protect from heavy, sharp or hot objects, which may cause damage and replace damaged cables immediately.
- Always send any damaged/faulty Bowens products to an authorised Service/Repair Centre.
- Remove the power cord by gripping the plug. NEVER pull the cord.
- Only use Bowens approved equipment with this unit.
- Always switch the Turbo-Pak OFF before connecting or disconnecting ANY cables.
- When moving the unit from extremes of temperature and humidity, allow at least one hour for the unit to stabilise at room temperature before use.

!!! WARNING HIGH VOLTAGE !!!

- **ONLY USE A CHARGER APPROVED BY BOWENS FOR USE WITH THIS EQUIPMENT**
- **TAKE CARE NOT TO DROP THE BATTERY CASSETTE - THE BATTERY IS HEAVIER THAN THE SIZE OF THE CASSETTE MIGHT SUGGEST.**
- **DO NOT USE A DAMAGED BATTERY CASSETTE.**
- **KEEP THE BATTERY CASSETTE CLEAN AND DRY TO PREVENT CONTAMINATION OF THE CONTACTS AND FUSES.**
- **THE BATTERY WITHIN THE CASSETTE SHOULD ONLY BE REPLACED BY AUTHORISED SERVICE PERSONNEL**

Notes on Battery Cassette Usage

- The pack cannot be used without a Battery Cassette or the Extender Battery Fitted.
- The pack can still be used while charging the Battery Cassette or Extender Battery providing there is sufficient charge remaining.
- Use only Bowens approved charger's or permanent damage may result.
- The Battery Cassette can be charged either within or outside the pack from the mains using the supplied charger or alternatively from a vehicle using the optional Automobile (car) charger.
- The battery has no memory effect so it can be charged and discharged from any state. However, for best results and service life never fully discharged the battery, charge it as soon as possible after use and keep it fully charged.
- Extra Battery Cassettes and charger's are available as accessories allowing quick replacement of an exhausted Cassette with a fully charged Cassette to allow continuous shooting.

Fitting the Battery Cassette

TurboPak

- Lay the pack on is longest side with the on/off switch uppermost.
- Lay the Battery Cassette with the fuses uppermost and the slotted handle to the right.
- Rotate the toggle button on the base of the Cassette to release the two handles and open them fully out.
- Slide the Battery Cassette into the pack with the slotted handle towards the right. The Cassette will not fit in the pack the wrong way round.
- Gently push the Cassette all the way in and fold the handles down so that they lock the Cassette inside the pack.
- Lock the handles in place by rotating the toggle button. Rotate the toggle button to adjust the lock.
- Stand the pack upright.

Removing the Battery Cassette

- Removal of the Cassette is the reverse of fitting.
- Lay the pack on its longest side.
- Rotate the toggle button on the base of the Cassette to release the two handles.
- Fold out the handles and pull on them whilst using the thumbs against the pack to eject the Cassette out of the pack.

Charging the Battery Cassette

- One universal voltage charger is supplied with the pack and is provided with a set of mains adaptors suitable for the majority of mains outlets around the world.
- Choose the adaptor suitable for your mains supply, slide it into place until it is fully home. If an unusual mains outlet is encountered an appropriate travel adaptor (not supplied) may need to be used together with one fitted to the charger.
- If the Battery Cassette is to be charged inside the pack, plug the charger output connector into the CHARGE jack socket on top of the pack.
- If the Battery Cassette is to be charged outside the pack, plug the charger output connector into the CHARGE jack socket on the side of the Cassette. Avoid knocking or placing strain on the connector.

Charging the Battery Cassette

- Connect the charger to the mains supply and switch on.
- A red indicator on the charger shows that the Cassette is charging normally.
- In the unlikely event that the indicator shows yellow then there is a fault and the Cassette and charger should be disconnected.
- The green indicator briefly flickering shows the transition between charging and trickle charge.
- When the indicator shows a steady green colour the Cassette is approximately 90-95% charged and is being trickle charged.
- If possible leave the Battery Cassette to charge for a further 30-60 minutes to ensure that it is fully charged. The Battery Cassette cannot be overcharged if the charger is left connected.
- A full charge from a discharged state may take anytime up to 6 hours depending on the charger used.
- Please read the Battery Cassette safety and maintenance instructions at the end of these instructions.

Controlling the TurboPak

General

The TurboPak is very simple to operate and control as follows:

NOTE: For safety the TurboPak cannot charge any fitted monolight unless all other sockets are fitted with either a dummy plug or a Travel-Pak cable (BW7632) terminated with a monolight. Only monolights switched to position II will be charged.

Turning The Pack On & Off

Turn the TurboPak on and off using the On/Off switch. The TurboPak will immediately display the charge state of the Battery Cassette regardless of the number or type of monolights fitted. If one or more monolights are fitted and switched on then after about 2 seconds the charge indicators will light to indicate a monolight is charging.

Charge Socket

Use only Bowens approved charger's or permanent damage to your unit may result.

The top panel charge socket allows the supplied 2A charger to charge the Battery Cassette when fitted in the unit.

Controlling the TurboPak

The Battery Cassette can also be charged at the same time as the unit is being used and this will effectively extend the number of flashes available. A discharged battery will take approximately 5-6 hours to fully charge.

For best results and maximum life from a Battery Cassette always keep it fully charged and avoid fully discharging it. Always charge the Battery Cassette as soon as possible after use and never leave it flat.

For maximum duty and flexibility spare Battery Cassettes and charger's are available to allow swapping out and charging outside of the TurboPak.

Head Socket

Each socket can power one Esprit Gemini / Travelite III monolight. When a head socket is not used it should be fitted with a dummy plug. The unit will not operate unless ALL sockets are fitted with either a dummy plug or a Gemini cable with a unit attached, whether switched on or not.

Battery Level Indicator

This shows the charge level of the battery from fully charged to flat. It also indicates when the unit is disabled due to the battery voltage being too low for correct operation.

Battery Level Indication	Approx Battery Voltage	Battery Condition	Action
Green, Yellow, Amber	> 12.4V	Good	Okay for use
Yellow, Amber	> 12.2V	Fair	Okay for use
Amber	> 12.0V	Low	Okay for use but getting low
Red	< 12.0V	Very Low	Restricted use - charge or replace ASAP
Flashing Red Only	< 11.6V	Flat	Disabled - charge or replace ASAP
Other colors flashing	> 11.6V	On Charge	Disabled - wait or replace ASAP

Battery Level Indicator

The TurboPak should not be allowed to fully discharge the Battery Cassette as this may significantly reduce the future capacity and operating life of the Battery Cassette.

It is not recommended to keep using the TurboPak when the red battery low indicator is showing although it will keep going until the flat battery condition is reached, when it will automatically switch off.

Always recharge the Battery Cassette as soon as possible after discharge. If FAST mode is selected then this will be overridden once the battery indicator drops to the amber level to prevent excessive drain from the near flat battery.

Spare Battery Cassettes and charger's are available so that discharged Modules can be quickly replaced with a fully charged one to allow shooting to continue.

Charge Indicators

A charge indicator is fitted adjacent to each socket. In normal use these light to indicate that charge is being supplied to the associated socket. Under fault conditions the indicators are also used in combination to indicate the pack status or faults. See the section on Status & Fault Indication.

During normal use the TurboPak checks each socket to see if a monolight is fitted and switched on. If one is fitted, it then checks to see if it requires a top-charge (i.e. the unit is READY) or requires a full charge (i.e. the monolight has just been switched on or has been flashed). A brief flash of the appropriate indicator shows a top-charge while an indicator remaining lit indicates full charge. The monolights are fully charged one at a time while other units are topped up to keep them at READY.

Thermal Management

The internal temperature of the TurboPak is continually monitored to protect the unit against overheating.

The charge rate is progressively decreased as the temperature increases to try and prevent the unit from reaching the overheat condition after which it will be disabled. This allows continued shooting albeit at a slower rate.

If the temperature rises above a preset level the internal fan is turned on to cool the TurboPak. Once the TurboPak has cooled sufficiently the fan is turned off. This reduces the drain on the battery when the TurboPak is used infrequently. If the ambient temperature is very high then the fan may be on for longer or not turn off at all.

If the temperature is too high for correct operation then ALL charge will be disabled and an overheat condition will be indicated. This will occur if the temperature sensor has a fault, the fan fails, or if the ambient temperature is too low for correct operation.

Fast / Slow Switch

All batteries have a finite capacity and life. Both of these are affected by the way the battery is charged and discharged. A high discharge rate will reduce both the capacity (number of flashes available from a full charge) and the time to end of life (the point at which the battery is deemed to be unusable).

The Fast/Slow switch provides the user with a means of controlling how fast the attached monolights are charged and consequently how quickly the Battery Cassette is discharged. Unless a particular set-up and application requires Fast charge then it is recommended that Slow mode is always selected to achieve the maximum capacity and life of the Battery Cassette. Only use Fast when the job requires a continual fast recycle time.

It is not possible to give recycle times for all combinations of monolights, flash settings, battery state temperature etc. The following equation will give a very approximate recycle time for a fully charged battery at normal ambient temperature:-

$$\text{Total Recycle Time (seconds)} = \left(\frac{\text{Power A} + \text{Power B} + \text{Power C} + \text{Power D}}{\text{Charge Rate}} \right) + (\text{Monos} \times 0.3) + 0.2$$

Where 'Power A, Power B' etc is the power rating or setting of each monolight fitted in Ws or Joules, 'Charge Rate' is 200 for Slow and 500 for Fast and 'Monos' is the number of monolights fitted.

As a guide typical charge times for 750Ws monolight set to maximum and flashed simultaneously from a fully charged Battery Cassette are as follows:

Number of 750Ws Monolights Fitted.	Typical Time to ALL Monolights Ready in Slow Mode (seconds)	Typical Time to ALL Monolights Ready in Fast Mode (seconds)
1	4.2	2.0
2	8.2	3.7
3	12.1	5.5
4	16.4	7.4

If the unit is worked heavily then it will automatically ramp down the charge rate to control the internal temperature and hence it will take longer to recycle the attached Gemini. To overcome this either slow the rate of flashing or wait for the unit to cool.

Note: Even if Fast is selected the TurboPak will override it as the battery becomes discharged or the internal temperature increases. The temperature and battery monitors work together to slow the charge progressively. As a rough guide when the amber battery indicator starts to show, the attached monolights will start to charge at a slower rate. This can be overcome by changing the battery module for a fully charged one or by using a Battery Extender. In addition, a mains or car charger is available; the pack may be used with a charger connected so that the battery is always being topped up.

Status & Fault Indication

The following will be indicated if the pack status changes or a fault occurs:-

1) Monolight Not Charging - ALL charge is disabled if a fitted monolight is not charging correctly. This is indicated by the associated charge LED slowly flashing. This automatically resets after approximately 1 minute or can be reset manually by switching the Fast/Slow switch or changing the status of any of the fitted monolights i.e. switch on or off, fit or remove the cable. The fault indication will re-occur if there is a genuine problem.

2) Overheat - ALL charge is disabled if the TurboPak internal temperature exceeds a preset threshold. This is indicated by the charge indicator LEDs flashing briefly in pairs in the order A and B, C and D, A and B etc. This automatically resets when the TurboPak cools sufficiently for normal operation. Check the vents for obstruction and confirm that the fan is operational.

3) Powerdown/Standby - ALL charge is disabled if none of the fitted monolights is flashed within a ten minute period. This is indicated by all four charge LEDs flashing briefly together at 2 second intervals. This can be reset manually by switching the Fast/Slow switch or changing the status of any of the fitted monolights i.e. switch on or off, fit or remove the cable.

4) Flat Battery - ALL charge is disabled if the Battery Module charge state is deemed to be too low for correct operation. This is indicated by the Battery condition LEDs flashing slowly. This will normally start with the Red LED flashing first but, if the charger is left connected and switched on, progressively more LEDs will flash as the Battery Module charges. This automatically resets after approximately 4 minutes but will re-occur unless the Battery Module has received sufficient charge to continue.

Typical Flash Capacity

	Number Of Monolights Fitted			
Power Rating	X 1	X 2	X 3	X 4
125Ws	1600	800	530	400
250Ws	800	400	266	200
375Ws	540	270	180	135
500Ws	400	200	166	100
750Ws	260	130	86	65
1000Ws	200	100	66	50

Recommended Maintenance

TurboPak

The Battery Cassette needs very little routine maintenance but for longest service life the following should be noted:

- Keep the Battery Cassette clean and dry. Do not use any organic solvents or detergents. Wipe it with a clean dr cloth.
- Only use a Bowens recommended charger.
- Charge or swap out the Battery Cassette before it is fully discharged.
- Never store the Battery Cassette in a partial or fully discharged condition.
- The Battery Cassette has no so-called memory effect but recharge it as soon as possible after use and keep it fully charged for longest life.
- Fully charge every 6-9 weeks to maintain battery condition.
- If possible leave the Battery Cassette on charge indefinitely.

Safety Information

The Battery Cassette contains a Sealed Lead Acid Battery containing hazardous chemicals and it is therefore subject to special waste disposal and/or recycling depending on your local legislation. The battery is recyclable.

In the USA only, you may call 1-800-SAV-LEAD (1-800-728-5323) for complete recycling information.

The best way of disposal is to return the Battery Cassette to your authorised dealer or service centre where it will be responsibly disposed of or recycled.

- Do flush the skin with water at once if contact is made with electrolyte (acid).
- Do not replace the fuses with any other type or rating.
- Do not open the Battery Cassette or try to modify it for any reason. There are no user-serviceable parts inside.
- Do not charge in a gas tight container.
- Do not short out or bridge the Cassette connections.
- Do not drop or subject to heavy knocks.
- Do not dispose of the battery in normal household waste.
- Do not dispose f the battery in a fire.

Heavy-Duty Battery

Designed to quickly and easily double the capacity of either the Explorer1500 or the TurboPak the Heavy-Duty Battery from Bowens offers photographers the assurance they need on extended location shoots to know they've always got enough power to capture that vital shot. Able to offer up to 1000 shots at 1500Ws the Heavy-Duty Battery from Bowens allows photographers total freedom from mains power.

BW7643

Heavy-Duty Battery Telescopic Trolley

Designed to make moving the Heavy-Duty Battery easier, this accessory simply attaches onto the back of the unit with the use of a simple clamp to securely connect them together.

BW7649

DID YOU KNOW? that Bowens have over **40** light shaping tools and accessories available for all their monolights that use the current 'S' type accessory fitting. Included among the range of accessories are a wide variety of reflectors and softboxes. For more information visit the website on **www.bowens.co.uk**

Weight	9.8Kg (inc battery)
Size	(L x W x H) 270mm x 180mm x 242mm (H = 281mm inc. handle)
Power Source	Interchangeable Battery Cassette (BW7642)
Typical Recycle Time	500 Ws
Items Supplied in Carton	1 x BW7655 TurboPak 1 x BW7642 Battery Cassette 1 x BW1227 Universal Mains 2A Battery Charger 1 x BWL0440 Operating Instructions 1 x Registration Card 1 x Safety Leaflet Additional items may be supplied for use in specific countries.
Accessories Available	BW1227 Universal Mains 2A Battery Charger BW1245 Automobile Battery Charger BW7642 Spare Battery Cassette BW7632 Cable for connection to Gemini heads

Battery Type	Maintenance free, non-spillable, Sealed Lead Acid Battery
Number of Cells	6
Nominal Battery Voltage	12V
Nominal Battery Capacity	12AH
Maximum Charge Currents	Managed Charge Only - 3A Bulk Charge 0.1A Float
Charger	Only use a Bowens recommended charger
Typical Battery Charge Times	With Supplied 2A Charger (BW1227) - approximately 5-6 hours. With Optional Car Charger (BW1245) - approximately 5-6 hours.
Size	172mm x 108mm x 120mm (L x W x H)
Weight	4.7Kg
Fuses	3 x 30A, User Replaceable, Automobile Type (ATO Fast Acting)